IOWA STATE UNIVERSITY
Digital Repository

Volume 3
Bulletin P76 *Growing garden roses*

Article 1

10-1-1945

Growing garden roses

E. C. Volz
Iowa State College

Follow this and additional works at: http://lib.dr.iastate.edu/bulletinp

 Part of the Agriculture Commons, and the Plant Sciences Commons

Recommended Citation
Volz, E. C. (1945) "Growing garden roses," *Bulletin P*: Vol. 3 : Bulletin P76 , Article 1.
Available at: http://lib.dr.iastate.edu/bulletinp/vol3/iss76/1

This Article is brought to you for free and open access by the Iowa Agricultural and Home Economics Experiment Station Publications at Iowa State University Digital Repository. It has been accepted for inclusion in Bulletin P by an authorized editor of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.

OCTOBER, 1945 BULLETIN P76

Vol. 2 Growing garden roses
S542
I09bp
c.3
Bdg

Growing GARDEN ROSES

AGRICULTURAL EXPERIMENT STATION—AGRICULTURAL EXTENSION SERVICE, Cooperating
IOWA STATE COLLEGE AMES, IOWA

Published by Iowa State University Digital Repository, 1945

CONTENTS

Growing Garden Roses

By E. C. Volz

The rose has been called the "Queen of Flowers," and its universal popularity is clearly shown by the fact that people attempt to grow roses in all parts of this and other countries. Roses are among the oldest of cultivated flowers and the frequent references to them in the Bible and other ancient writings testify to the prominent part they have played in the history of mankind. Although the rigorous and rather changeable climate of certain sections of the United States offers some handicaps to rose growing, it is possible to select certain types of roses which can be grown easily in any location where other sun-loving garden flowers are successful. The wise gardener is careful to study the particular situation in question before selecting varieties and types for planting. For the average home garden in Iowa, the following classes of roses will be found most suitable.

ROSES FOR COLD CLIMATES

HARDY ROSE SPECIES AND HYBRIDS

Roses in this group serve the same purpose as many of our hardy shrubs for planting in natural borders, and their chief use is for landscape effects. Hardy rose species and hybrids which have demonstrated their garden value include the Austrian briars, the sweet briars, Rosa Hugonis, Rosa rubrifolia, Persian Yellow, Harrison's Yellow, the Scotch roses and others. From China, Korea and Japan came the hardy rose species known as rugosa because of its thick, wrinkled leaves. The plants are the essence of vigor, and rugosa roses are popular garden subjects for lawn plantings on account of their extreme hardiness, resistance to pests and profuse bloom. Rose hybridizers have crossed this species with other roses and as a result have produced some excellent hybrids. The well-known F. J. Grootendorst is such a variety. In using rugosa roses in the garden it is well to remember their rampant growth. They are, therefore, not suitable companions for hybrid tea and other more delicate types, but are useful for yard planting and grouping

with shrubbery. These hardy roses may be grown in Iowa without protection.

HYBRID PERPETUAL ROSES

This class of bush rose is characterized by a rather stiff, upright growth. The foliage is large, dull colored and somewhat wrinkled. The flowers are large and borne in great profusion during June and into early July. The name "perpetual" is somewhat of a misnomer due to the fact that varieties in this class bloom only once in early summer and are not everblooming as the name would indicate. These old-fashioned roses are recommended for the beginner because of their ability to withstand extreme cold with little protection. Mostly of European origin these hybrid perpetual varieties bear such interesting names as Frau Karl Druschki and General Jacqueminot. The well-known American Beauty is also a member of this group.

Fig. 1. White hybrid perpetual rose, Frau Karl Druschki. An old stand-by in this class.

HYBRID TEA ROSES

Without question, hybrid tea roses occupy the most prominent place in modern rose gardening, and their popularity is well-deserved. Varieties in this class are noted for continuous bloom, pleasing form of bud and flower, variety of color and fragrance. Superseding the old-fashioned tea rose because of better performance and greater hardiness they offer a challenge to the modern gardener who desires the ultimate in roses. The commercial florist uses this type al-

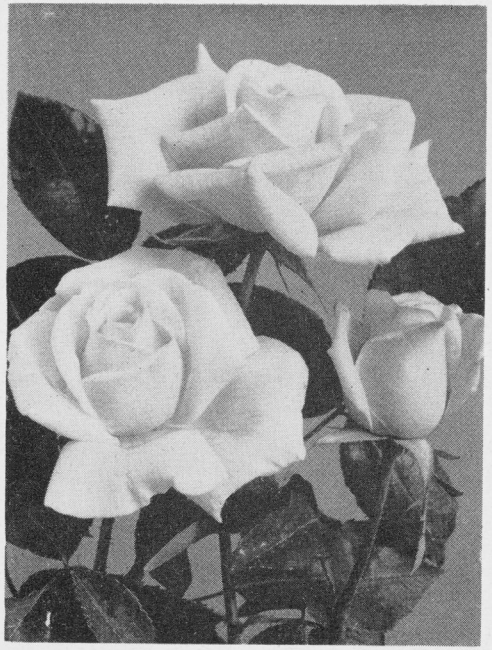

Fig. 2. Yellow hybrid tea rose, Lowell Thomas.

Fig. 3. Hybrid tea rose, Charlotte Armstrong. An All America Selection. Color, rosy red.

most exclusively, because under glass the plants bloom practically the year around. Hybrid tea roses are descended in part from the true tea rose which is exceedingly tender and not recommended for Iowa planting. With proper protection, varieties of hybrid teas will live for years in cold climates. Specimens of standard varieties which have survived the rigors of Iowa winters for more than a decade may be found in the college trial garden. The loss of a few plants due to winter killing is not regarded as serious by enthusiastic rose growers, who realize that the bloom produced the first season after planting will more than offset the cost of the plant. For the conservative person who absolutely insists on no losses due to winter killing we mention two tried and true everblooming bush roses which may be successfully wintered in this locality. These varieties are the red rose Gruss an Teplitz and the pink Birdie Blye. Although these roses cannot be called true hybrid tea, they are splendid in beds or borders and are truly everblooming.

POLYANTHA ROSES (SMALL FLOWERING)

Polyantha roses also are known as the Baby Ramblers. They originated by crossing hybrid tea roses with hardy climbers. The result was a dwarf bush type of plant with

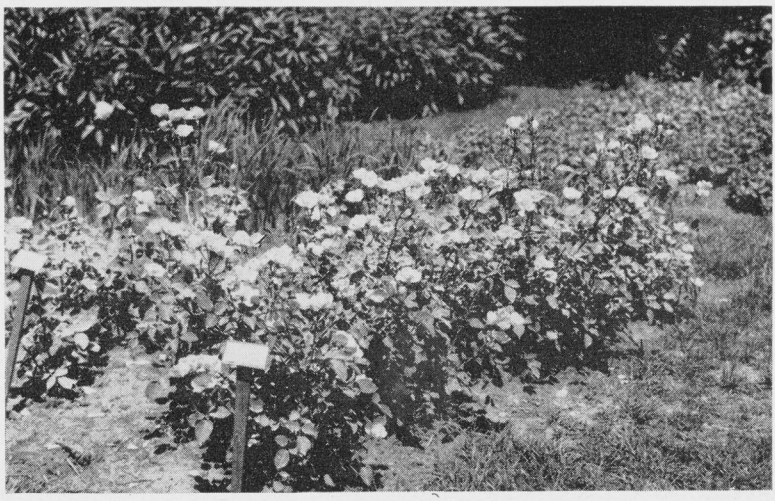

Fig. 4. Small-flowered polyantha rose.

large clusters of many small blossoms. These shapely roses are deserving of more attention by all rose growers. Their one disadvantage is lack of fragrance; however, they compensate for this by continuous flowering and reasonable hardiness. Polyantha roses are especially valuable for massing in beds or borders, for edging beds of larger roses and to some extent for mingling with other flowers.

Fig. 5. Polyantha roses decorating bird bath.

FLORIBUNDA ROSES (LARGE FLOWERING POLYANTHA)

To meet the need for a hardier, more rugged, easy-to-grow race of roses, which would persist in producing a continuous supply of large flowers, rose breeders developed the new so-called floribunda type of dwarf bush rose. Using both polyantha and hybrid teas as well as hardy wild roses in the crossing, the resulting plants show an improvement over the polyantha in size of bloom and cut flower value. The typical rose in this class has large blooms produced in clusters from early June until frost. These roses are exceedingly useful wherever color in mass effects is desired throughout the growing season.

Fig. 6. Variety, Adolph Grille, a bright red floribunda or large-flowered polyantha rose.

Fig. 7. A 1945 All America Selections rose, Floradora. Typical of floribunda type.

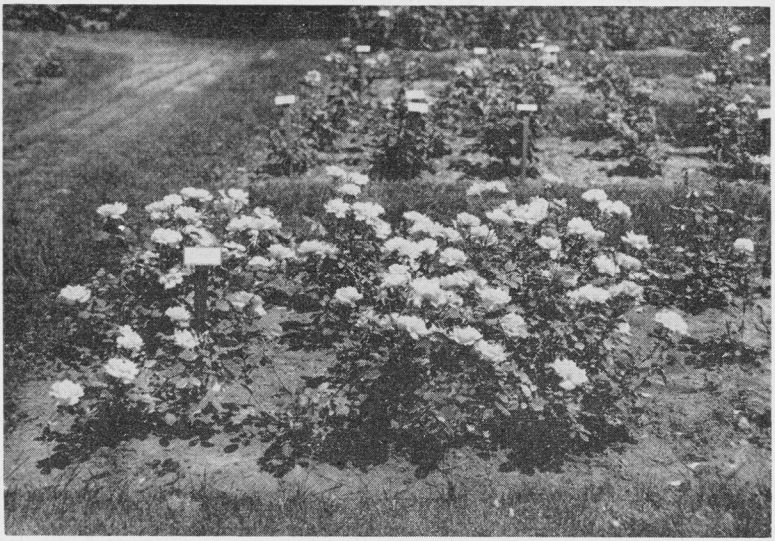

Fig. 8. Typical large-flowered polyantha or floribunda bloom.

Fig. 9. All America Selections floribunda or large-flowering polyantha rose. Variety, World's Fair. Color, dark red.

HARDY CLIMBERS OR RAMBLER ROSES

Climbing roses are universally popular as trellis plants or for covering pillars, fences, walls and banks. When consulting catalogs for varieties of hardy climbers one should remember that not all climbing varieties are hardy in this climate. This is especially true of climbing tea and climbing hybrid tea roses which should not be given consideration for Iowa planting. From the standpoint of bloom there are two types of hardy climbers, large and small flowered, the latter usually borne in large clusters. Paul's Scarlet Climber is an example of the first group and Dorothy Perkins represents the small-flowered cluster type. In general, varieties listed as hardy climbers will prove satisfactory providing the gardener will afford them protection as explained later in the text. One important thing to remember about this group of roses is that it is impossible to have flowers the first year after planting, because the flowering wood must be pruned closely to assist the plant in becoming established in its new location. Hardy climbers, for the most part, cannot be considered everblooming, and their principal flowering season is June and early July. Rose breeders have made some progress in developing varieties which bloom repeatedly throughout the season.

WHERE TO GROW ROSES

Roses are at their best when grown by themselves, and the most suitable place for their culture is a specially prepared bed or border where they will not suffer from competition by other plants. A sunny, open area, sheltered from severe west or north winds is a very desirable location for rose beds. If one does not have an entire garden devoted to this flower, special beds may be set aside in a mixed flower garden, or they may be placed along the borders of lawns if care is used not to locate the planting too near large shrubs or trees.

KIND OF SOIL

As most Iowa garden soils are reasonably good in texture, fertility and depth, it is not necessary to make elaborate

preparation for planting roses. Sandy soil should be avoided except for the rugosa type of rose which thrives on any soil. Clay or silt loam which grows satisfactory vegetables and garden flowers can be made to produce good roses. In preparing the soil for planting it should be dug about twice the depth of the spade, or about 18 inches deep, and a considerable quantity of well-rotted manure should be thoroughly mixed in the bottom half of the bed. If manure is not available peat (peat moss) and commercial fertilizer may be substituted. If texture or fertility is in doubt a special bed may be prepared by excavating the soil to a depth of 2 feet. In the bottom of this bed a 6-inch layer of gravel, broken bricks or similar coarse material may be placed for drainage. On top of the stones place a 4-inch layer of cow manure and then fill the balance of the excavated bed with a loam mixture consisting of 3 parts soil and 1 part well-rotted manure.

PLANNING THE ROSE BEDS

Some thought should be given to the size of the rose bed. Four feet is a good average width, and artistic effects are secured when grass paths surround the individual beds. Drainage of the soil is improved when the soil is slightly elevated above the walk or path. If an entire garden is devoted to roses, a hedge or tall screen planting will serve the dual purpose of protecting the plants and acting as a color background for the bushes when in bloom.

SELECTING AND BUYING THE PLANTS

The average amateur usually is puzzled when the time comes to place an order for rose bushes. Rose plants, like trees and shrubs, are not as easily propagated as annuals and herbaceous perennials, and the home gardener will find it highly desirable to get his plants from some reliable nursery or rose specialist. Experienced rose growers know that best results are obtained by planting **dormant, 2-year-old, field-grown, budded** plants. The rose nurseryman produces such stock mainly by grafting or budding the desired variety onto some hardy root stock such as the multiflora rose which

has given splendid results under Iowa conditions. These budded plants usually will produce more and earlier blooms the first year on bush roses, and because of the hardiness of the root stock are better in that respect. Some rose growing establishments prefer to propagate by means of cuttings so it is possible to secure 2-year-old dormant plants on their own roots. With certain varieties such plants will perform in a satisfactory manner, but in most cases budded plants have proved their superiority. One-year-old rose bushes are on the market and sold as pot plants. Usually grown from cuttings these plants are too small to become properly established and are not recommended. Potted rose plants, whether 1 or 2 years old, do not have the strong and well-developed root system found in dormant stock, but as they are in a growing condition when received they may be planted at a much later date. This advantage is offset by inferior growing performance, and the grower who used dormant stock, planted at the proper time, will be ahead eventually. What about **bench roses?** Bench roses are plants which have been growing in commercial greenhouses for cut flower purposes for 1 or more years. They are limited in variety to the hybrid teas that the florist has grown for commercial cut blooms. When one understands their limitations, they are excellent to use for one-season effects and usually sell at a lower price. Greenhouse bench roses are not so well adapted to outdoor conditions as 2-year-old field-grown budded plants, so many will be lost by winter killing.

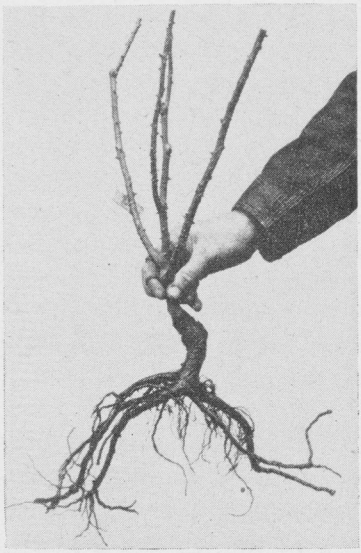

Fig. 10. Best results are obtained by planting dormant, 2-year-old, field-grown, budded rose plants.

WHEN TO PLANT ROSES

The general practice recommended for planting shrubs and trees is a fairly safe guide for planting roses. In regions where fall planting is always safe for woody plants it may be advisable and advantageous to include roses. However, such recommendations are not always safe in Iowa. Early spring, that is, late in March or early in April, is the safest time, and plants should be ordered early enough to coincide with this schedule. The chief advantage in buying rose plants in the fall lies in a better selection of varieties and better grade of plants. Fall-purchased plants may easily be kept in good condition for early spring planting by burying them below the frost line in a specially constructed pit or trench. Lay the plants on their sides in the bottom of the trench and cover with about 2 feet of soil. Remove and plant in early spring.

HOW TO PLANT ROSES

The planting distance for bush roses varies as follows: Hybrid perpetuals and large bush types should be planted 24 inches apart each way. Hybrid teas, floribundas and dwarf polyantha roses should be spaced 16 to 18 inches each way. In planting rose bushes it is essential to dig the hole large enough to permit spreading of the roots laterally as well as in a horizontal position. The following steps in the planting of rose bushes are important:

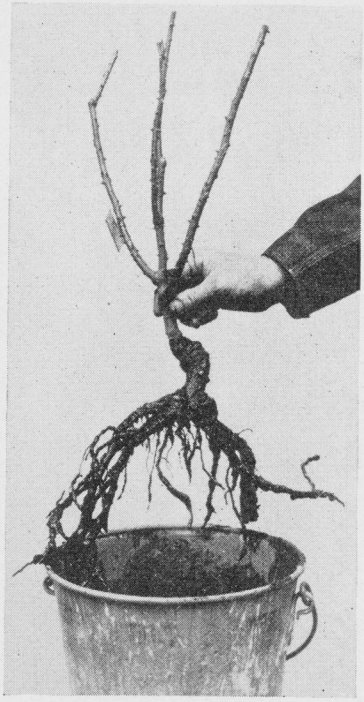

Fig. 11. Dipping the root system in a thin mud bath is a good practice to prevent drying of the rootlets.

1. Plants should not dry out.

Handle the plants with the

Fig. 12. In digging holes for rose plants make the opening large enough to accommodate the large and spreading root system.

Fig. 13. In planting a budded rose the swollen joint caused by the budding operation should be slightly below ground level. Spread the roots and firm soil about them as soil is added.

least exposure of the roots todry air. If it is necessary to delay planting for a week or more, remove the plants from the bundles and "heel them in," i. e. partially bury them in a shady, moist spot in the garden. Dipping the root system in a thin mud bath before planting is a good practice. This is known as "puddling" the roots.

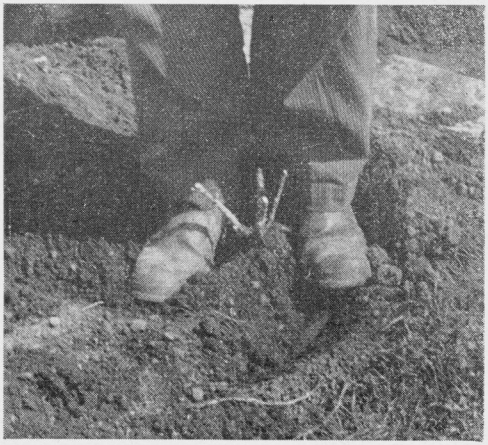

Fig. 14. After covering roots with soil tramp thoroughly to insure firm planting.

Fig. 15. Final step in planting a rose bush is to mound soil over stems to prevent drying out until new growth develops.

2. Pruning and preparing plants.

Examine each plant carefully, and cut away all broken and diseased branches and roots. If the plants were not pruned before shipping cut back each branch to a length of 5 or 6 inches.

3. Planting.

The plant should be set a little deeper than it was in the nursery, and if it is a budded rose, the swollen joint caused by the budding operation should be slightly below ground level. Spread the roots and fill in with soil, firming the soil as it is added. When most of the roots are covered step into the hole

and firm soil well with the feet. Fill the hole with water, allow to drain well, and add enough loose soil to permit complete covering of the branches. This temporary mounding of the pruned branches protects them from shrivelling and drying out. In about 10 days or 2 weeks or after the buds have started to grow, the mounded soil covering may be removed to expose the branches to ground level.

SUMMER CARE OF ROSE PLANTS

The hoe and hand cultivator are the best tools for maintaining the soil in good condition. Cultivation and weed control as recommended for a vegetable garden are adequate in the rose garden. A substitute for cultivation may be achieved by mulching the ground with about 2 inches of granulated peat moss, well-rotted manure, shredded tobacco stems or other available mulching material. If the ground requires additional humus the mulch may be worked into the soil in the spring.

Faded blossoms should be cut promptly to help appearances and to prevent unnecessary seed formation. In cutting blooms for bouquets the stems should be taken longer during the earlier weeks of the blooming season, but as the season advances more and more wood should be left on the bush. In any event one or two leaf buds should be left below the point of cutting to permit new flowering stems to develop.

Regular applications of complete fertilizer after the first year are advisable for good rose culture. Well-rotted manure, reinforced with bone meal may be worked into the top soil in early spring after the plants have been pruned. Commercial fertilizers, commonly known as 4-12-4 mixtures, may be substituted in moderate amounts if natural manures are not available. The feeding program should terminate in early August as the plants must ripen their late growth before winter sets in. When roses are planted in well-prepared soil it is not advisable to give extra fertilization during the first season.

CONTROLLING INSECTS AND DISEASES

There are a number of pests which appear from time to time which take the joy out of rose growing unless one is prepared to combat them. Under Iowa conditions the principal pests on roses are two fungus diseases—mildew and black spot; and two types of insects—aphids or lice, and the leaf-eating rose slug which skeletonizes and eats holes in the foliage. Rose growers who prefer to use dusting equipment will find that a dust containing 1 percent rotenone in combination with dusting grade sulfur will give excellent control of all diseases and insects of roses. Regular dusting with dusting sulfur alone will prevent injury to the foliage caused by black spot or mildew. A spray containing 1 percent rotenone with wettable sulfur will also give complete pest control. Similar results may be obtained by spraying rose plants with the old reliable bordeaux mixture to which has been added 3 level tablespoonfuls of arsenate of lead and 1 teaspoonful of 40 percent nicotine sulfate per gallon of bordeaux spray. If rotenone is not available and control of plant lice alone is desired use a solution of nicotine sulfate. The 40 percent strength is recommended, and this should be added to water at the rate of 1 teaspoonful of nicotine sulfate and 1 ounce of soap per gallon. Pyrethrum, when available, may be substituted for nicotine. Either the dust or spray should be applied at 10- to 12-day intervals throughout the growing season.

During the war, a number of excellent new compounds have been developed for quick, powerful insect control. Many of these materials will be available in the near future. A word of caution is advisable concerning their use, since experimental work is not complete. These compounds may kill many beneficial insects as well as the pests against which they are directed. They may also have a detrimental effect on plants, since stunting and foliage loss have been noted in some cases. Use any new insecticide with care, preferably on only a few plants, until results have been observed.

WINTER PROTECTION

With the exception of hardy species, all roses discussed in this bulletin will require special winter protection in Iowa. To winter hybrid tea roses successfully complete covering is required, and the treatment should begin in late fall before freezing weather sets in. First, cover the base of each plant with soil, which is hilled up around the bush in a cone 6 to 8 inches high. The soil for the hilling should not be taken from the rose bed but brought in from another part of the garden and removed from the rose beds in the spring. The soil hill prevents drying of the rose stems in that area where the new shoots arise in the spring and also prevents injury due to alternate freezing and thawing.

The second phase of the wintering process is complete covering of the bushes with a good mulching material. Dry leaves are excellent and easily obtained. Marsh hay, straw or soybean hay is also good mulching material. If the bushes are too tall the upper branches may be pruned leaving the plants about 18 inches high. Close pruning is not advisable

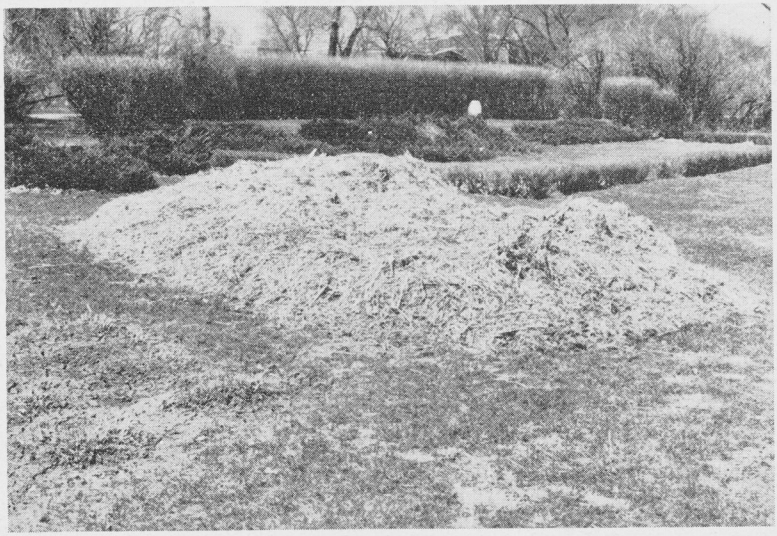

Fig. 16. A bed of hybrid tea roses protected for winter. Covering consists of soil mounded at base of each plant. Tops completely covered with dry leaves held in place with strawy manure.

because the basal growth may not survive. When loose, fluffy material, such as dry leaves, is used on the rose beds it should be held in place with a light but substantial covering of strawy manure, evergreen branches or corn stalks. The expensive practice of covering the mulched beds with heavy, waterproof paper or wooden frames is satisfactory but not absolutely necessary in our climate.

Polyantha and the modern floribunda roses have more resistance to cold weather than hybrid teas. Hilling soil about the base of the plants is a safe precaution, but usually a covering of leaves or other light litter will winter them successfully. When grown in small beds for garden effect an easy way to protect them is to place side boards around the bed in the nature of a cold frame, filling the space between the plants with leaves or other litter.

In cold sections where climbing roses are killed back to the ground if the canes are left on the trellis, the only safe procedure is to remove the canes from the support, lay them on the ground and cover the entire plant with soil and leaves. Straw is not recommended as it harbors mice, which often girdle the stems in their search for food. The task of removing rose canes from a trellis is not an easy or pleasant undertaking. Leather gloves and thorn-resisting clothing are a definite help in removing unruly canes from an intricate rose support. Fortunate indeed is the gardener who can plant his climbers against a low fence where the canes can be removed and laid on the ground for easy covering as previously described. A wood fence, about 3 feet high and of simple design, is ideal for this purpose.

Removal of the winter mulch should be a gradual process, and careful timing is essential. When weather permits, first remove the top covering which holds the leaves in place and allow air to circulate among the plants. After a few days the remainder of the mulch may be taken away and finally the soil mound at the base of the plants. Sprouts may develop before the plants are completely uncovered, but no harm results if the delay is not too long.

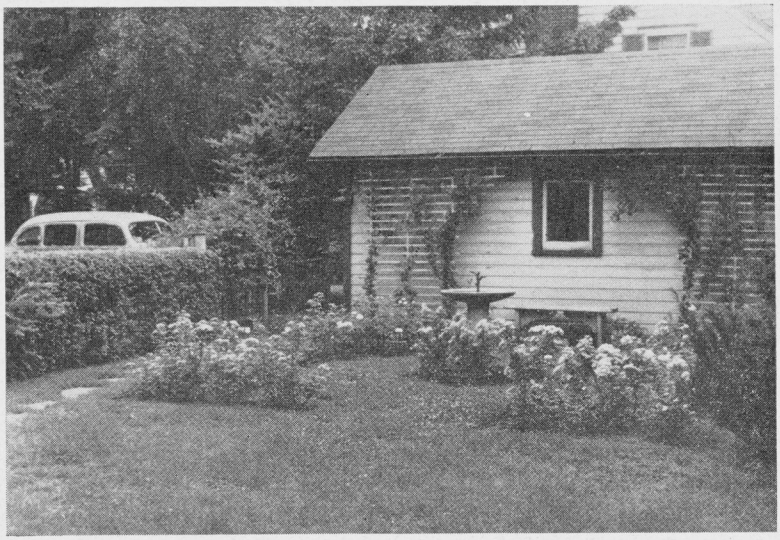

Fig. 17 (a). Small rose garden planted entirely with polyantha and floribunda varieties.

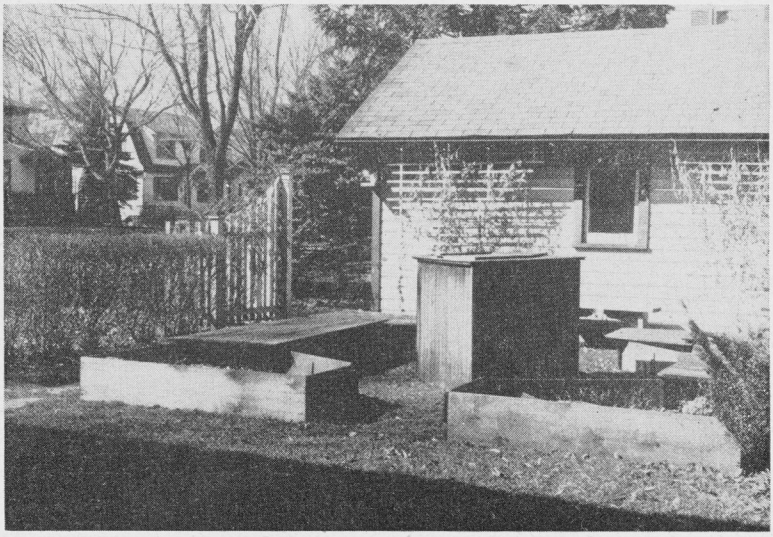

Fig. 17 (b). The same garden with roses protected with dry leaves and wooden frames.

PRUNING

Intelligent pruning of rose bushes largely determines the size and number of individual blooms. As explained under planting suggestions, the first pruning is made while the plants are dormant, and all types should be cut back to within 6 or 8 inches of the ground to induce the growth of new shoots from the base of the plant.

The pruning of established plants 1 year or older varies with the type. With hybrid tea roses, the first thing to do after removing the winter covering is to cut away the dead wood. If more than 5 or 6 inches of the main branches are alive they should be cut back to a length not to exceed 8 inches. Cut the branch with pruning shears about ¼ inch above a bud or eye, and if at all possible make the cut above an eye which will grow away from the center of the plant rather than into it. Careful selection of the cutting point will result in a better balanced plant. The pruning of the polyantha and floribunda roses is similar to that in hybrid teas but need not be as severe if the branches are not badly winter killed. In the case of hybrid perpetuals about ⅔ of the last year's growth should be removed.

The procedure with hardy climbing roses is somewhat different after the first pruning. The small, cluster-blooming types such as Crimson Rambler and Dorothy Perkins produce flowers chiefly on canes which grew during the previous season. Roses of this type are best pruned in midsummer after the flowering season. At that time remove all old canes and weak shoots. All the canes which have withered flowers on them may be cut out close to the base of the plant. Healthy new shoots are then trained up to replace the branches which have been taken out. The object is to make a complete new plant each year above the ground. Large-flowered climbers such as Dr. W. Van Fleet and Mary Wallace are tenderer than the small-flowered ramblers and should be sparingly pruned in early spring. Every 3 or 4 years take out the old wood which has become diseased, rough and scaly.

ROSE TRIALS AT IOWA STATE COLLEGE

Each year new varieties of roses are sent to the trial gardens of the Floriculture Subsection at Iowa State College to be scored and judged under the auspices of the American Rose Society and the All America Rose Selections committee. The latter is a non-profit horticultural corporation and was formed for the careful testing and evaluating of new varieties of roses before they are placed in sales production. The American Rose Society is the oldest established organization sponsoring rose culture in the United States. The two organizations are in no sense competitive, and while there is no official connection between them, all the judges, members, trustees and sponsors of All America Rose Selections are members of the American Rose Society, and in a number of instances their trial grounds are located in the same gardens.

Fig. 18. All America Rose Selections varieties in the trial garden at Iowa State College.

ALL-AMERICA ROSE SELECTIONS TO DATE AND THEIR BEHAVIOR IN THE IOWA STATE COLLEGE TEST GARDEN.

Variety	Class	Basic coloring	Introduced	Rating under Iowa conditions
Apricot Queen	Hybrid Tea	Apricot shades	1940	Fair. Recommended for West Coast.
California	Hybrid Tea	Deep golden yellow	1940	Fair. Recommended for West Coast.
Charlotte Armstrong	Hybrid Tea	Rosy red	1941	Excellent.
Dickson's Red	Hybrid Tea	Red	1940	Excellent. Outstanding red.
Flash	Climber	Oriental red	1940	Excellent with protection.
Floradora	Floribunda	Salmon rose	1945	Outstanding floribunda.
Fred Edmunds	Hybrid Tea	Autumn shades	1944	Only fair in Iowa. Recommended for West Coast.
Grande Duchesse Charlotte	Hybrid Tea	Wine red	1943	Excellent.
Heart's Desire	Hybrid Tea	Deep rose red	1942	Good plant, weak stem.
Horace McFarland	Hybrid Tea	Deep pink	1945	Excellent.
Katherine T. Marshall	Hybrid Tea	Deep pink	1944	Excellent.
Lowell Thomas	Hybrid Tea	Butter yellow	1944	A good yellow.
Mme. Chiang Kai-Shek	Hybrid Tea	Light yellow	1944	A good yellow. Somewhat susceptible to black spot.
Mme. Marie Curie	Hybrid Tea	Golden yellow	1944	Excellent.
Mary Margaret McBride	Hybrid Tea	Rose pink	1943	A good pink.
Mirandy	Hybrid Tea	Rich crimson red	1945	Outstanding dark red.
The Chief	Hybrid Tea	Salmon red	1940	Excellent.
World's Fair	Floribunda	Deep red	1940	Excellent.

These test gardens have been located in widely separated areas to study varietal behavior in different climatic sections of the United States. Trials for the American Rose Society include both named and unnamed varieties. Only new and undisseminated varieties are accepted for the All America Rose Selections, and each entry must complete a 2-year testing period before final judgment is made and before there is any distribution of plants. In scoring the roses the judges make a careful study of plant habit, vigor, disease resistance, floriferousness, flower stem, foliage, bud form, flower form, substance, color and fragrance at intervals during the growing season.

From 1939 to 1944, inclusive, 117 rose varieties were tested for the All America Selections. Of these, 15 were given national recognition and 3 were approved on a sectional basis by the official scoring committee which tabulates the findings of all the judges and makes the final recommendations concerning superior varieties. As soon as varieties are named they are labeled for the benefit of the public, and visitors at the college gardens therefore are enabled to see the world's finest new roses in open trial-grounds competition.

BLACK SPOT SUSCEPTIBILITY OF ROSE VARIETIES

Black spot, a leaf disease of roses, begins as a blackish or purple spot on the leaf, enlarging rapidly and causing the leaf to become yellow and fall off. Injury to rose plants varies with locality and climate, but all experts agree that this disease is the most serious pest on roses, and complete control measures have not been worked out. Regular spraying or dusting with a good fungicide will reduce the amount of injury to a minimum and the apparent resistance of some varieties to black spot offers another method of approach.

Records made on the rose varieties under trial in the college gardens during 1942, 1943 and 1944 indicate that there is a definite tendency toward resistance to black spot in certain varieties. In comparing the records for the three seasons it was noted that comparatively few varieties changed

their relative rank, and resistance to black spot seems to have a definite bearing on the ability of roses to survive over a period of years. Hybrid tea roses which have bloomed satisfactorily in the trial garden for the past 10 years without replacement are: Mrs. Pierre S. duPont, Rocket, Texas Centennial, Editor McFarland, Condesa deSastago, Mrs. Sam McGredy, Carillon, Kardinal Piffl, Betty Uprichard, Dainty Bess, Pink Radiance, Lucy Marie and Padre. With the exception of Lucy Marie, all of these roses were quite resistant to black spot. Selecting resistant varieties for planting in the home garden is just one of the necessary factors in successful rose culture and does not eliminate the necessity for protection against rose pests by spraying or dusting. All of the roses under observation for black spot in the trial gardens were sprayed regularly with fungicides and insecticides. The following list of recommended roses for Iowa planting is based for the most part on good, all-around performance in the trial garden for a period of 2 years or longer. So-called All America varieties are not included in the list. Their rating will be found in the table on page 551.

RECOMMENDED LIST OF ROSES FOR IOWA PLANTING

HARDY ROSE SPECIES AND HYBRIDS

No protection required

Agnes—yellow
Amelia Gravereaux—Carmine Red
Austrian Copper—Coppery Red
Birdie Blye—Pink
F. J. Grootendorst—Crimson
Grootendorst Supreme—Deep Red
Harrison's Yellow—Golden Yellow
Persian Yellow—Golden Yellow
Pink Grootendorst—Pink
Rubrifolia—Pink
Rugosa alba—White
Rugosa rubra—Red
Skyrocket—Red
Sir Thomas Lipton—White

HYBRID PERPETUAL ROSES

Hardy with protection

American Beauty—Deep Pink
Frau Karl Druschki—White
General Jacqueminot—Red
Mrs. John Laing—Pink
Paul Neyron—Pink
Prince Camille deRohan—Maroon
Roger Lambelin—Crimson and White
Ulrich Brunner—Cherry Red

HYBRID TEA ROSES

All require full protection

PINK

Adoration
Carillon
Charlotte
Editor McFarland
Picture
Pink Radiance
The Doctor
Treasure Island

YELLOW

Golden Dawn
Mrs. E. P. Thom
Mrs. Pierre S. duPont
Rose d'Or
Soeur Therese

RED

Christopher Stone
Crimson Glory
Dickson's Red
Etoile de Hollande
Flambeau
Grenoble
Rocket
Rouge Mallerin

TWO-TONE

Condesa deSastago
Fama
Fantastique
Mrs. Sam McGredy
Radio

HYBRID TEA ROSES (Continued)

WHITE

Caledonia
Kaiserin Auguste Viktoria
Mme. Jules Bouche
Neige Parfum

POLYANTHA (SMALL FLOWERED)

Hardy with protection

PINK

Cecil Brunner
Chatillon
Ellen Poulsen

RED

Crimson Baby Rambler
Ideal
Triomphe Orleanais

YELLOW AND ORANGE

Gloria Mundi
Golden Salmon
Poulsen's Yellow

FLORIBUNDA (LARGE FLOWERED POLYANTHA)

Hardy with protection

PINK

Betty Prior
Gruss an Aachen
Joyous
Pinnochio
Rose Elfe

RED

Adolph Grille
Cheer
Empire State
Holstein
World's Fair

HARDY CLIMBING ROSES

All need protection

Blaze—Red
Climbing American Beauty —Pink
Crimson Rambler—Red
Dorothy Perkins—Pink
Dr. W. Van Fleet—Pink
Excelsa—Crimson
Flash—Orange Scarlet
Golden Glow—Yellow
Hiawatha—Pink and White
Mary Wallace—Pink
Paul's Scarlet—Red
White Dorothy Perkins

Cooperative Extension Work in Agriculture and Home Economics, Iowa State College of Agriculture and Mechanic Arts and the United States Department of Agriculture cooperating. Extension Service, R. K. Bliss, director, Ames, Iowa. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914.

Agricultural Experiment Station, Iowa State College of Agriculture and Mechanic Arts, R. E. Buchanan, director, Ames, Iowa.